

S.N. 10/008,585
Art Unit: 2643

IN THE DRAWINGS

Please replace the first two sheets of drawings, containing FIGS. 1 and 2 respectively, with the enclosed replacement sheets of drawings.

REMARKS

The present application was filed on November 2, 2001 with 25 claims. A Restriction Requirement was mailed on October 28, 2004, and Applicants responded to the Restriction Requirement on November 10, 2004, electing with traverse claims 5-25 from Group II. Because claims 1-4 have been withdrawn from prosecution by the Examiner, Applicants have canceled these claims in the present response. Applicants reserve the right to prosecute claims 1-4 in a future application. Also in the present response, Applicants propose to amend claims 5, 6, and 10-19. The amendments are supported, e.g., by FIGS. 1 and 2 and associated text in Applicants' specification. No new matter is added. The currently pending claims are 5-25, and the independent claims are 5, 10, and 20.

Applicants have submitted replacement drawings for FIGS. 1 and 2. For each of FIGS. 1 and 2, the originally filed informal drawings had referred to the elements in the entire Figure as reference 31. See, e.g., the originally filed informal drawings and page 4, line 21 to page 9, line 26 of Applicants' specification. Applicants subsequently filed formal drawings, which made reference 31 appear to refer not to the entire Figure but to a portion of the Figure. The presently submitted replacement drawings correct this so that reference 31 once again refers to the entire Figure for each of FIGS. 1 and 2.

Applicants have amended the specification on page 3 to include the text including "having an oscillator input port, a frequency reference port, a radio frequency input port, a radio frequency output port, and a phase detector output port," as recited in originally filed independent claim 10. On page 7, Applicants have amended the text to state (emphasis added) the following, as shown in FIG. 1 for instance: "In the preferred embodiment the partial VCO within the 418 UHF IC is utilized as an emitter follower circuit or buffer 142."

Applicants have performed certain clarifying amendments to the claims. For instance, claims 10-19 have been clarified through amendment to remove "the steps of" or "the step of". Claim 10 has been clarified through amendment to correct an error of a grammatical nature. Claims 16-19 have been clarified through amendment to change

“wherein transceiving data in the device adapted to transceiving data in the radio frequency spectrum further comprises” to --further comprising--. These clarifying amendments were not made for patentability purposes.

In the outstanding Office Action, the Examiner rejected claim 16 under 35 U.S.C. §112, first paragraph. The Examiner asserted that claim 16 mentions “operating the device with a transmit/receive time ratio less than 1.5” but the specification does not mention an operating time ratio. Applicants have amended the specification on page 3 to include text from originally filed claim 16. The text includes “operating the device with a transmit/receive time ratio less than 1.5”. Consequently, Applicants respectfully request the §112 rejection to claim 16 be withdrawn.

In the outstanding Office Action, the Examiner rejected independent claims 5 and 10 under 35 U.S.C. §103(a) as being unpatentable over “BlueChip Communication AS BCC418 UHF Transceiver Reference Manual Rev. 1.0” (hereinafter, the “BlueChip Manual”) in combination with Hareyama et al., U.S. Patent No. 5,752,169 (hereinafter, “Hareyama”) and rejected independent claim 20 under 35 U.S.C. §103(a) as being unpatentable over the BlueChip Manual and Hareyama in further view of Applicants’ admitted prior art of FIG. 4. Applicants respectfully disagree and traverse these rejections.

Applicants have amended independent claims 5 and 10. Each of the amended independent claims 5 and 10 and original independent claim 20 is directed to an integrated circuit (IC) having a partial voltage controlled oscillator (VCO) and another VCO, outside the IC, coupled to the partial VCO. Applicants respectfully submit that the BlueChip Manual, Hareyama, and Applicants’ FIG. 4, alone or in combination, do not disclose or imply an IC having a partial voltage controlled oscillator (VCO) and another VCO, outside the IC, coupled to the partial VCO.

The Examiner, when rejecting claims 5 and 10, asserts that the BlueChip Manual discloses a second VCO coupled to a transmitter. Applicants respectfully disagree. The BlueChip Manual in section 5.1.1 shows a VCO, a portion of which resides on the

BCC418. See section 5.1.1 of the BlueChip Manual, where it states, "The circuit schematic of the VCO with external components is shown in Figure 4. The VCO is basically a Colpitts oscillator. The oscillator has an external resonator and varactor." The external circuit for section 5.1.1 comprises diode D1, resistors R7 and R8, capacitors C13 and C14, and inductor L1. There is no other VCO or partial VCO disclosed or implied in the BlueChip Manual.

For instance, in FIG. 3 of the BlueChip Manual, the circuit of section 5.1.1 is shown coupled to the OscIn input (pin 6) and the OscVdd input (pin 5) of the BCC418. Another circuit is shown in FIG. 3 that is coupled (before and after R8 in Figure 3 of the BlueChip Manual) to the circuit shown in section 5.1.1, but this other circuit is shown in Figure 8 of section 5.1.7.3 of the BlueChip Manual and described in the following manner:

Modulation outside the PLL requires a loop-filter with a relatively low bandwidth compared to the modulation rate. This results in a relatively long loop lock time. In applications where modulation is applied to the VCO, but at the same time a short start-up time from power down to receive mode is needed, dual loop-filters can be implemented. Figure 8 shows how to implement dual loop-filters.

Thus, the circuit for Figure 8 of the BlueChip Manual is not described as a VCO or a portion thereof, and Applicants cannot find any disclosure or implication in the BlueChip Manual of an IC having a partial VCO and another VCO coupled to the partial VCO.

Applicants also cannot find any disclosure or implication in Hareyama of an IC having a partial VCO and another VCO coupled to the partial VCO. Additionally, the components in FIG. 4 of Applicants' specification are the components in Figure 4 of the BlueChip Manual, and Figure 4 of the BlueChip Manual has been described above. Moreover, when describing FIG. 4 of Applicants' specification, Applicants state the following:

In the preferred embodiment the components 142A external to the IC 14 are replaced with a complete VCO (Fig. 1, item 12). The VCO 12 may be any suitable type of VCO, for example a Colpitts Oscillator, for use with the transceiver IC 14. In the preferred embodiment the VCO 12 is

designed to operate the transceiver IC 14 below 200 MHz. An operational example of the preferred embodiment is shown in Fig. 5.

It is the Applicants who determined that replacing the components 142A (see FIG. 4 of Applicants' specification) external to the IC 14 with a complete VCO provides beneficial results. One exemplary result is allowing the IC 14 to be operated at 200 MHz, which is lower than the designed frequency of the BCC418 for instance (see the table entitled "Quick reference data" on page 1, section 1, of the BlueChip Manual, which lists a frequency between 300 and 600 MHz).

Moreover, at page 7, lines 8-23, Applicants state the following:

It will be appreciated that a novel feature of the present invention allows commercial off the shelf transceiver ICs to be adapted to applications not originally intended by the IC manufacturer. For example, the aforementioned 418UHF transceiver is designed to operate at a minimum frequency of 300 MHz. However, features of the present invention in the preferred embodiment adapt the IC to operate well below the specified frequency and yet maintain the IC's desirable operating characteristics. In addition, the remnants of the IC's internal VCO may then be utilized for other functions not originally anticipated by the manufacturer. In the preferred embodiment the partial VCO within the 418 UHF IC is utilized as an emitter follower circuit or buffer. In alternate embodiments the remnants may be utilized as filters. As noted, features of the present invention permit the IC to be used in applications not originally contemplated by its manufacturer.

Providing another VCO outside the IC allows the BC418 UHF transceiver to operate outside the minimum design frequency of 300 MHz and allows the IC's internal VCO to be utilized for other functions. Thus, providing a VCO outside the IC is not something that the manufacturer intended, but is instead something the inventors have determined is useful.

Consequently, Applicants respectfully submit that because none of the references of the BlueChip Manual, Hareyama, and Applicants' FIG. 4 disclose or imply an IC having a partial VCO and another VCO coupled to the partial VCO, then the combination of the references does not disclose or imply an IC having a partial VCO and another VCO coupled to the partial VCO. Therefore, amended independent claims 5 and 10 and original

claim 20 are patentable over the BlueChip Manual, Hareyama, and FIG. 4, alone or in combination, for at least the reasons given above.

Because independent claims 5, 10, and 20 are patentable, their respective dependent claims 2-9, 11-19, and 21-25 are patentable for at least the reasons given above.

Furthermore, regarding dependent claim 6 and independent claim 20, the Examiner states that “[a]t the time the invention was made, it would have been obvious to one of ordinary skill in the art to be motivated to incorporate a partial voltage controlled oscillator in the BlueChip Manual and Hareyama frequency synthesizer because the applicant’s specification states that a suitable transceiver IC will contain a partial VCO.” See Office Action on pages 6 and 7.

However, it should be noted that it was Applicants who realized that a partial VCO existed in a transceiver IC and that a second VCO could be coupled to the partial VCO. For instance, Applicants state the following on page 7, lines 17-19: “In addition, the remnants of the IC’s internal VCO may then be utilized for other functions not originally anticipated by the manufacturer. In the preferred embodiment the partial VCO within the 418 UHF IC is utilized as an emitter follower circuit or buffer.” The Court of Appeals for the Federal Circuit has stated the following:

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that *the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.*

In re Rouffet, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (emphasis added). It appears that the Examiner is using the Applicants’ own specification in order to provide motivation to combine the various references used to reject claims 6 and 20. Consequently, Applicants respectfully submit that the Examiner is using hindsight analysis, which is not allowed to provide motivation to combine references.

Therefore, dependent claim 6 and independent claim 20 are patentable for at least this reason and the reasons given above.

Based on the foregoing arguments, it should be apparent that claims 5-25 are thus allowable over the references cited by the Examiner, and the Examiner is respectfully requested to reconsider and remove the rejections.